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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,016	07/14/2006	Thomas Weiss	CH-8460/LeA 36,955	1150

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EXAMINER	
BOYLE, ROBERT C	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,016	WEISS ET AL.	
	Examiner	Art Unit	
	ROBERT BOYLE	4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5, 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Any rejections stated in the previous Office Action and not repeated below are withdrawn.

3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on January 15, 2009. It is noted that while claim 1 was amended to recite the limitations of claim 4 (now cancelled), the dependency of claim 3 was changed and improper multiple dependent claims 5 and 6 were rectified, nevertheless, since the examiner is applying references in a manner that is not strictly triggered by applicant's amendment only, the present action is made NON-FINAL.

Claim Rejections - 35 USC § 103

4. Claims 1, 3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. WO/2003/029307 in view of Reetz et al. U.S. Patent 6,224,739.

5. Takahashi teaches the hydrogenation of a conjugated diene polymer in a latex of the conjugated diene polymer, incorporating a catalyst, which include ruthenium and rhodium, where the catalyst is incorporated as a dispersion in the system and the catalyst is prepared in the presence of the polymer, the catalyst is reduced prior to hydrogenation of the polymer, the latex is hydrogenated and the catalyst system is removed from the latex, and a catalyst is prepared under acidic conditions, pH 3 and 4

(paragraphs 014, 051-52, 063, 098, 099, 104, and 111-112). Takahashi does not teach the use of colloids.

6. Reetz teaches using solvent stabilized metal colloids to be used in hydrogenation (abstract; column 2, lines 6-25; column 3, line 61- column 4, line 3).

7. Takahashi does not teach the temperatures and pressures disclosed in claim 6. However, it is the examiner's position that temperature and pressure are result effective variables because changing them will clearly affect the type of product obtained. See MPEP 2144.05(B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize the temperatures and pressures within the scope of the present claims so as to produce desired end results.

8. Claims 1, 3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. WO/2003/029307 in view of Craig et al. U.S. Patent 4,801,643. For convenience, the U.S. national stage application of Takahashi, US 2004/0242800, will be used for translation and citations.

9. Takahashi teaches the hydrogenation of a conjugated diene polymer in a latex of the conjugated diene polymer, incorporating a catalyst which include ruthenium and rhodium, where the catalyst is incorporated as a dispersion in the system and the catalyst is prepared in the presence of the polymer, the catalyst is reduced prior to hydrogenation of the polymer, the latex is hydrogenated and the catalyst system is

removed from the latex and a catalyst is prepared under acidic conditions, pH 3 and 4 (paragraphs 014, 039, 051-52, 063, 098, 099, 104, and 111-112).

10. Takahashi does not teach that the dispersion is a colloid. Craig teaches creation of colloids where the pH ranges from 2.8 to 5.1 (Column 7, lines 17-38).

11. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the dispersion in Takahashi with the colloid at the pH levels taught in Craig because an acidic substance promotes the dissolution of the catalytically active ingredient and the current invention uses catalytically active ingredients, see Takahashi, paragraph 069. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

12. Takahashi does not teach the temperatures and pressures disclosed in claim 6. However, it is the examiner's position that temperature and pressure are result effective variables because changing them will clearly affect the type of product obtained. See MPEP 2144.05(B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize the temperatures and pressures within the scope of the present claims so as to produce desired end results.

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi and Reetz or Takahashi and Craig, as applied to claims 1, 3 and 5 above, in view of Craun et al., U.S. Patent 5,470,906. The discussion with respect to Takahashi,

Reetz and Craig as set forth in paragraphs 4-10 above is incorporated here by reference.

14. Takahashi does not teach unsaturated polymers of conjugated dienes or polymers of 1-5% by weight conjugated dienes and from 95-99% by weight unsaturated monomers containing vinyl groups.

15. Craun teaches forming an emulsion latex polymer where the preferred ethylenic monomer is vinyl acetate (an unsaturated monomer containing vinyl groups) copolymerized with other ethylenic monomers in which the copolymer formed has less than 20% other ethylenic monomers (column 8, lines 35-45). The other ethylenic monomers can include conjugated dienes (column 8, line 57). The ratio taught by Craun includes the ratio in claim 2.

16. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the polymer to be hydrogenated in Takahashi with the ratio of the monomers in the copolymer taught in Craun because changing the ratio of the monomers is known to change physical properties of the copolymer, such as the Tg or softening point, see Craun, column 9, lines 38-60. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

17. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi and Reetz or Takahashi and Craig as applied to claims 1, 3 and 5 above, and further in view of Abraham et al., U.S. Patent 4,994,528. The discussion with

respect to Takahashi, Reetz and Craig as set forth in paragraphs 4-10 above is incorporated here by reference.

18. Takahashi does not teach the hydrogenation of the colloid-containing latex mixture is carried out at temperatures in the range of from 0.1 to 100 bar and at temperatures in the range of from 25 to 100°C. Abraham teaches hydrogenation at temperatures from 25 to 50°C and pressures at 500 psi (34.4 bar) and at 1000 psi (68.9 bar).

19. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the hydrogenation in Takahashi with the pressures and temperatures taught in Abraham because if the reaction temperature and pressure is too high, side reactions could occur, see Takahashi, paragraph 096. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

20. Applicant arguments filed January 15, 2009 have been fully considered, but were not found persuasive.

21. Applicant's argument that a metal colloid prepared at a pH of 14 will not hydrogenate is not persuasive. Applicant points to comparison example 1.1 of the instant application, which had no hydrogenation. Applicant's argument is not persuasive.

22. Examiner notes that example 1.1 of the instant application was performed with nickel prepared at a pH of 12, whereas the hydrogenation examples used in Takahashi are palladium at pH from 3-12 (paragraphs 0102-0112). Note in Table 1, hydrogenation

with a catalyst prepared at a pH of 3 gives 15% hydrogenation, comparable to the hydrogenation of the instant application. Takahashi illustrates that hydrogenation with a catalyst prepared at a pH of 12 is active, giving 95% hydrogenation. The instant application merely shows that a *nickel* catalyst is not active after preparation at a pH of 12 under the conditions disclosed by the instant application.

23. Applicant argues Takahashi teaches metal dispersions as opposed to metal colloids disclosed in the instant application. Applicant states that dispersions and colloids are different because the particle size of a colloid is limited and defined, whereas a dispersion has no limitation on particle size. Applicant's argument is not persuasive.

24. Takahashi is used to teach hydrogenation at the requisite pH levels in an aqueous dispersion (see above rejections). Takahashi is not used to teach the formation of a colloid. References Reetz and Craig are used to teach the use of colloids. One of ordinary skill in the art would look to colloid chemistry when dealing with latexes and dispersions and vice versa. While dispersions are not colloids, one of ordinary skill in the art would recognize that colloids are dispersions, and latexes are a specific class of dispersions, and that all three are related. Furthermore, one of ordinary skill in the art would recognize that when dealing with dispersions of metal particles and polymers, the particle size would most likely fall within the category of colloids. Therefore Applicant's argument is not persuasive.

25. Regarding Applicant's argument that Craig does not teach the use of metal containing colloids prepared in the pH range of 3-6, this is not persuasive.

26. While Craig does not disclose all the features of the present claimed invention, Craig is used as a teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, MPEP 2145; *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973); *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. Specifically, Craig teaches the formation of colloids within the pH range claimed. Therefore Applicant's argument is not persuasive.

27. Regarding Applicant's argument that references Craun and Abraham do not teach the use of metal containing colloids prepared in the pH range of 3-6, this is not persuasive.

28. While Craun and Abraham do not disclose all the features of the present claimed invention, Craun and Abraham are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, MPEP 2145; *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973); *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach certain concepts, and in combination with the primary reference, disclose the presently claimed invention. Specifically, Craun is used to teach the monomer ratios able to be used in the polymers to be hydrogenated and Abraham is used to teach common hydrogenation temperatures and pressures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. C. B./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796